DIVISION OF ENVIRONMENT
QUALITY MANAGEMENT PLAN

PART III:

CLANDESTINE LABORATORY CLEAN UP PROGRAM
QUALITY ASSURANCE MANAGEMENT PLAN

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Kansas Department of Health and Environment
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* Refer to State Cooperative and State Deferral Programs for the Bureau's Standard Operating Procedures (SOP's) used in this Program Plan.

Section 1

INTRODUCTION

1.1 Purpose of Plan

This document presents the quality assurance management plan for the Clandestine Laboratory Clean-up (Meth) Program. The plan describes the mission, developmental history, organizational structure, environmental monitoring protocols, data handling procedures, and quality assurance (QA) and quality control (QC) requirements of these programs. Standard operating procedures (SOPs) and equipment used in the programs are presented in the appendices of the plan.

1.2 Plan Revisions

To be effective and useable, this document must be maintained in an up-to-date condition. As required by the Division of Environment Quality Management Plan (Part I, section 7), the contents of the plan are reviewed on at least an annual basis. Minor changes in the report's organizational structure or terminology may be approved by the Section Chief. However, major revisions which substantially change the contents of the document, especially in terms of QA policies or procedures, require the added approval of the Bureau QA Representative and the Bureau Director.

Section 2

DESCRIPTION OF PLAN

2.1 Historical Overview

The Clandestine Laboratory Clean-up (Meth) Program was initiated by the passage of the Chemical Control Act. The Chemical Control Act became effective on July 1, 1999. The Act was passed to address the clean-ups at clandestine methamphetamine laboratories being seized by law enforcement. Also included in the Act was a requirement to educate law enforcement, first responders, the general public, etc. concerning the illegal production of methamphetamine and registering all the manufacturers, wholesalers, and retailers of the new19 regulated chemicals. The Kansas Department of Health and Environment (KDHE) and the Kansas Bureau of Investigation (KBI) entered into a memorandum of understanding outlining the responsibilities of each organization.

2.2 Mission and Goals

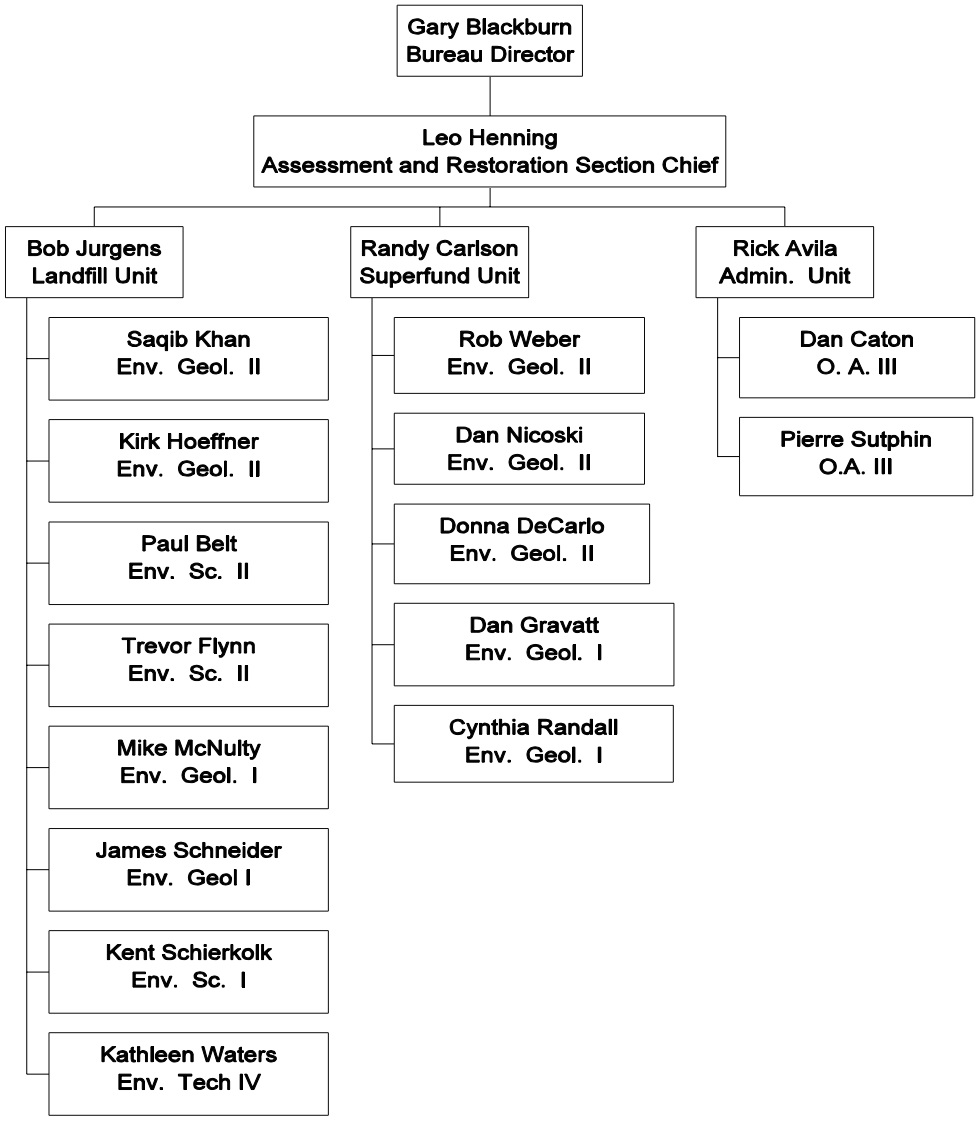
The mission of the Meth Program is to respond to clandestine laboratory sites and cleanup the hazardous materials and contaminated solid materials to the point where they are no longer hazardous to the environment. The manner in which the program operates to accomplish this mission requires (1) immediate response by the agency or its contractor to the site, (2) oversight of staff to see the material is contained, cleaned up, or neutralized, and (3) the proper disposal of wastes.

The goal of the program is to respond to releases of substances, materials, or wastes in such a manner as to prevent, contain, and cleanup effected media to minimize damage to the waters and soils of the state.

The Meth Program is staffed by two full-time Environmental Scientist positions, with assistance from several other central office staff.

2.3 Organization and Responsibilities

ORGANIZATIONAL CHART



The Bureau Director's responsibilities are defined in the BER QA management plan presented in Part II of the QMP.

The Section Chief is responsible for supervising the Unit Leader of the Landfill Unit. The operations and implementation of uniform policies and procedures for the Meth Program is the responsibility of the Section Chief. Additionally, the Section Chief is responsible for planning, organizing, supervising and directing the statewide activities of the Meth Program.

The Unit Leader is the Meth Program manager and is responsible to ensure the requirements of the program-level QA management plans and SOPs are implemented in a consistent, timely and reliable manner. Working with the Section Chief, the Unit Leader strives to improve the precision, accuracy and reliability of all environmental data collected and products (reports) generated as part of Meth Program activities through the effective allocation of staff and resources.

The Landfill Unit is composed of Environmental Geologists, Environmental Scientists, and one Environmental Technician. The Environmental Scientist are responsible for conducting all aspects of the Meth Program including site assessment and remedial activities under the supervision of the Unit Leader. The Environmental Scientists are the Project Manager for each clandestine laboratory site. The Environmental Scientists perform site inspections, assessments, and monitor clean-up of the clandestine laboratories by the Programs contractor. Staff is on call 24 hours a day to respond to a clandestine laboratory site. The staff have access to an environmental response contractor that will respond to the site for cleanup under the oversight of the Environmental Scientist.

For work completed by staff, all site assessments and remedial work must have a Work Plan submitted to and approved by the Unit Leader which meets the objectives and minimum data quality and quantity required of such investigations. All final site assessment and remedial reports must be approved by the Unit Leader before submission to the Section and Bureau Director.

Section 3

QUALITY ASSURANCE / CONTROL POLICY STATEMENT

Project managers and the Unit Leader possess standard operating procedures for administration of quality assurance/quality control for the Meth Program. Project managers can develop site specific Quality Assurance Project Plans, when appropriate, in accordance with KDHE's SOPs and numerous federal regulatory guidance documents for QA/QC. Sometimes the Unit's role within the program is limited to reviewing and approving work plans and reports for investigative and remedial activities conducted by an environmental contractor. As an element of the review process, the Unit requests the responsible party, or environmental contractor, provide a well-defined Quality Assurance Project Plan, with respect to certain Standard Operating Procedures included in Appendix A. Project Managers review each of these site specific Quality Assurance Project Plans to determine compliance with KDHE's SOPs.

Project managers are responsible for environmental sampling, including any split, duplicate, or collocated environmental samples to ensure the representativeness and general quality of the various samples collected at a site throughout the investigation. All sampling activities conducted by Meth Program project managers or technicians follow the following general program guidelines:

(1) The objectives of any environmental monitoring project shall be determined prior to implementation of data collection activities. This determination shall be accomplished during the planning stage of the project so that appropriate procedures will be incorporated into the design of the project and the resulting data will have a reasonable probability of meeting the stated objectives.

(2) Sample collection and analysis activities and data management activities shall be subjected to periodic evaluation by supervisory personnel to identify and correct deficiencies and enhance the overall credibility of the environmental monitoring programs.

(3) All data collection activities will be accomplished and documented in accordance with a Divisional QA Plan and applicable Standard Operating Procedures (SOPs).

Section 4

QUALITY ASSURANCE / CONTROL CRITERIA AND PROCEDURES

4.1 Field Station Site Selection

The selection of sampling locations is based on several factors including type and purpose of the sample, representativeness, accessibility (permission to sample), location of existing wells, location of potential source areas of contamination and location of potential target areas. Selection criteria vary depending upon the type of medium being sampled and the purpose of the sampling which are described in site-specific Quality Assurance Project Plans (QAPP's).

4.2 Field Equipment Installation

Generally field staff will use non-dedicated sampling equipment that is either disposable or reusable. Sampling equipment designated for reuse must be decontaminated as specified in SOP (BER-005). Some sites as designated by the project manager may have dedicated sampling equipment in place.

4.3 Sampling Types

Program staff primarily provide Quality Assurance/Quality Control management services through the collection of split, duplicate, replicate, and/or collocated environmental samples concurrent with environmental sampling performed by the responsible party or an environmental contractor. In addition, program staff may occasionally be required to collect independent environmental samples.

Ground water is the most frequent environmental media sampled, followed by surface and subsurface soils, surface water, sludge, sediment, and air. In addition, program staff may be required to collect special samples including influent and effluent water samples associated with ground water or surface water remedial systems, or remedial performance samples including potentially hazardous wastes or materials which have been stabilized to facilitate handling and transport or to reduce contaminant mobility.

Program staff collecting Quality Assurance/Quality Control environmental samples adhere to the sample collection procedures specified in the KDHE-approved site-specific sampling plan. KDHE's approval of the site-specific sampling plan is dependent upon the plan's compliance with field methods and sampling procedures provided in the KDHE Document BER-01. This document is a compilation of demonstrated field techniques that have been used during investigative and remedial activities at solid waste disposal sites. The purpose of the plan is to ensure that sampling data collection activities will be comparable to and compatible with data previously collected.

Program staff independently collecting environmental samples follow various internal Standard Operating Procedures. Standardized Operating Procedures (SOPs) developed for program staff include "Procedures for Collecting Groundwater Samples" Document BER-01. This document contains information on sample identification, transport and chain-of-custody.

4.4 Safety Considerations

Field and laboratory staff that participate in environmental programs encounter potentially dangerous situations on a frequent basis. In addition to the routine possibility of automobile or equipment accidents, employees may encounter extremely slippery surfaces, toxic or hazardous substances, infectious microorganisms, fire or electrocution hazards, vicious dogs, belligerent persons, or other threatening situations. Injuries or illnesses resulting from such situations may lead to substantial human suffering and, from a QA/QC perspective, deprive programs of the services of a valuable employee for an extended period of time.

Although it is not possible to predict every conceivable risk that may arise during the course of work, supervisors must ensure that those risks faced by staff on a recurring basis are addressed in the SOPs and are discussed during employee training. Field and laboratory staff are expected to abide by the safety protocols contained within the QA management plans and SOPs and to integrate safety considerations into all aspects of their work. Field staff should follow SOPs BER-014, BER-024 and BER-020. BER routinely budgets for ongoing safety training expenses and annual medical physicals for field staff associated with monitoring and/or field inspections of hazardous materials (refer to BER-017).

Project managers are expected to bring potentially unsafe practices or situations to the attention of their Unit Leader. In turn, the Unit Leader shall evaluate the practice or situation and either take the appropriate corrective action or, in complicated circumstances, seek the advice of the Section Chief or higher level supervisor. Major corrective actions warranting changes in a SOP shall be implemented by staff only upon approval of the Section Chief and Bureau Manager.

4.5 Requesting Analytical Services

Program staff can employ several approaches for the submission of environmental samples to a laboratory for analyses. Staff can submit environmental samples directly to the Kansas Health and Environmental Laboratory (KHEL) or contract the services of an outside laboratory.

The selected laboratory must have a specific Quality Assurance and Quality Control Plan approved by the Division Director prior to utilization by the Section. Generally, the KHEL will be used for the majority of the program's analytical service. However, the purpose of the contractual arrangements is to provide additional analytical capacity Quality Assurance and Quality Control (inter-laboratory duplicates) and to provide expanded analytical services.

4.6 Procedures for Assessing Data Precision, Accuracy, Representativeness and Comparability

4.6.1 Ongoing Quality Assurance Review and Special Audits

QA/QC aspects of the Meth Program are subject to ongoing review by the Section Chief. Staff are expected to cooperate fully with administrative requests for information on data precision/accuracy and overall QC performance. The Unit Leader is expected to track the QC performance of Project Managers, assist managers in identifying QC deficiencies within their assigned sites, and facilitate the initiation of necessary corrective actions. The Section Chief is expected to track the QC performance of the program, assist Project Managers in identifying QC deficiencies within their programs, and facilitate the initiation of necessary corrective actions. The results are reported to the Bureau Director.

4.6.2 Equipment Calibration and Maintenance

All field equipment must be checked out by staff from the Bureau's Equipment and Supply Technician. The individual users of field equipment are responsible for the maintenance (in accordance with manufacturer's procedural manuals and/or Standard Operating Procedures) of the equipment while being used in the field operations. The user should ensure the equipment is checked for proper operation and is current with calibration requirements (if needed) prior to leaving for field. The user should record any malfunctions encountered while in the field in the logbook associated with the equipment. The user should make sure the malfunctions are communicated to the Unit Leader and the Bureau's Equipment and Supply Technician upon return of the equipment to storage so that appropriate action can be initiated to repair the item of equipment, or initiate actions (e.g., prepare a Purchase Requests or Purchase Acquisitions) to have the equipment repaired upon return from the field.

4.6.3 Quality Control Blanks and Spikes

Quality control procedures must be taken by field staff to ensure the integrity of the samples collected. Without checks on the sampling and analytical procedures, the potential exists for contradictory or incorrect results. Procedures describing quality control samples are defined in BER-029 or are included in specific SOPs.

4.7 Corrective Action Procedures

In the context of Quality Assurance (QA), Meth Program corrective actions are procedures that may be implemented on environmental samples that do not meet predetermined QA specifications. In general, the corrective action procedures program addresses the analysis of any cause precipitating a negative audit finding and identifies the appropriate corrective action(s) necessary to address it. Program staff, or the appropriate Quality Assurance/Quality Control program designee, are responsible for reviewing data validation reports, audit reports and nonconformance reports to identify significant

or repetitious conditions adverse to quality, or deficiencies regarding the implementation or adherence to required Quality Assurance practices. In addition, the program staff, or QA/QC designee, is required to investigate the source(s) of the problem and is responsible for defining and/or implementing the necessary actions to remedy the problem.

The quality characteristics of data generated by sampling, monitoring, or analyzing, is defined in the following terms:

Precision: A measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. Precision is best expressed in terms of the standard deviation. Various measures of precision exist depending on the prescribed similar conditions.

Completeness: A measure of the amount of valid data obtained from a measurement system, compared with the amount needed to obtain the project data quality objectives.

Representativeness: The degree to which data accurately and precisely represent a characteristic of the population, the parameter variations at a sampling point, a process condition, or an environmental condition. It also includes how well the sampling point represents the parameter variations that are under study.

Comparability: The confidence with which one data set can be compared with another; a qualitative characteristic that must be assured in terms of sampling, analysis, reporting, etc.

The exact values of the quality characteristics will vary depending upon the analytical processes and procedures employed. Site-specific work plans will detail the recommended field activities and analytical methodologies necessary to establish the appropriate data quality characteristics. Corrective actions may include resampling, reanalyzing samples, or auditing laboratory procedures.

4.8 Data Management

All work plans submitted in association with the Meth Program require a data management system. The system should include field logs, sample management and tracking procedures, and document control and inventory procedures for both laboratory data and field measurements. The system should ensure the data collected during the investigation are of adequate quality and quantity to support the findings of the investigation, risk assessment (if performed), and corrective action research.

For each measurement, the data reduction scheme planned for collected data, including all equations used to calculate the concentration or value of the measured parameter, should be described. The principal criteria employed to validate the integrity of the data during collection and reporting should be referenced.

All data collected should be validated by the appropriate level of laboratory quality control to ascertain whether it is appropriate for its intended use. All task management and quality controls implemented shall be documented within the appropriate report appendix.

4.9 Quality Assurance/Control Reporting Procedures

All reports or deliverables submitted through the Meth Program require a Quality Assurance/Quality Control status summary of the project and any conditions adverse to the quality. The report should contain an assessment of measurement data accuracy, precision and completeness, results of any performance audits, results of system audits, any reported nonconformances, and any Quality Assurance problems, together with recommended solutions or corrective actions.